United States Patent Application: 20050215928
Kind Code A1
Banks, Carolyn Leah ; et al. September 29, 2005

TITLE OF INVENTION: BACK-MUSCLE ROLLOVER

CROSS-REFERENCE TO RELATED APPLICATIONS

The present application derives priority from U.S. Provisional Patent Application10/808,088, dated: September 29, 2005. Art Unit 3764.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT
Not applicable

THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGGREEMENT
Not applicable

INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC or REFERENCE TO A "MICROFICHE APPENDIX"
Not applicable

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The field of endeavor of this patent application is for a device and method of providing back massage and/or acupressure stimulation to the muscles supporting the spine, and, to a limited degree, intervertebral or intersegmental extension of the spine.

2. Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98

[0002] A backache is a common syndrome characterized by pain and tenderness emanating from the components of a person's spinal support system. The pain is experienced deep under the skin, is not localized, and is characteristically of a dull, aching quality. The pain is almost always found with mechanical dysfunction of neuromuscular tissues. The progressive pain syndrome has a deleterious effect on the spinal support system and the person to whom the painful back belongs. This results in inhibition of the spinal extensor muscles, or if very painful, a co-contraction of flexor and extensor trunk muscles resulting in muscle spasms. Often an individual's only recourse is to seek medical attention when the symptoms become severe. However, by that time, muscles may have atrophied; posture may have suffered to compensate for the painful sections of the spine; and the individual may require extensive remedial action to recover form the progressive pain syndrome.

[0003] The best available recourse might be a method of relieving backaches before they become severe. However, some of the products available to relieve backaches require significant financial investments and are not portable and others could be perceived as a possible cause of additional pain because of their extreme appearance. For instance, some products are made of metal with knobs, knurls, sharp edges, etc. Other products are large devices meant for traction or manipulation of the spine and/or provide equilateral massage to the spine and/or supporting muscles. In addition, our research has found none

that are designed for use parallel to the spine, but instead are used perpendicular to the spine, generally applying pressure equilaterally.

[0004] In contrast, our invention is inexpensive, soft to the touch (See Figures 1, 2 & 3), includes extensive directions and cautions for use, requires relaxation to use properly, allows infinite adjustment of pressure applied against the device, and is very portable. It consists of a hard inner core, either a hollow tube or solid rod, covered by a sueded foam sleeve. Our available models are 8 to 8 ¼" long and 1 to 1 3/8" in finished outside diameter (OD). Sizes with a core from 5" to 10" long and 9/16" to 1 ½" in OD must be special ordered. All include copyrighted instructions explaining the massage/acupressure method for using the device.

[0005] The object of our invention is to provide a simple device that an individual can use in the privacy of their home or office; while either lying supine on a firm surface or pressing against a vertical surface; to give themselves either a complete back massage or simply massage an area of their back that is currently causing pain; and possessing the additional benefit of micro-adjusting the pressure applied to the massaged areas. We believe this invention should be available to provide pain relief from simple back-muscle tension, but is not meant as a medical device without supervision by a medical professional.

[0006] The first-named inventor suffers from backaches caused by mild scoliosis. She was desperately searching for back-pain relief that was always available when needed because time available to seek chiropractic care was significantly constrained. Toward that end, she began using a wooden dowel to massage her back along the lamina grooves. When she shared her discovery with the other inventors, they found the dowel was simply too painful to use because it was rigid. They suggested the dowel needed padding to protect the spine; therefore, padding was added to the hard core. In addition, we have developed an assortment of diameters to allow persons with a variety of body builds to benefit from the Rollover.

[0007] A specific method for using the Rollover was developed (See Claim 3) and it was soon discovered that written instructions were necessary as were warnings and notes for use. Instructions were developed and copyrighted September 24, 2003 by Carolyn Leah Banks with the original date of publication being June 2, 2003. The first Rollover was sold September 29, 2003.

[0008] The inventors hired a firm to do a "Patentability Search" for our device using the original name of "Muscle Roller". The search was completed and reported on September 5, 2003. The search firm focused their "body of art" search for similar "exercise roller" products including "single rollers used for exercising purposes" and "variations of exercise rollers". The exercise roller results included three single roller design patents and two utility patents. In addition, one design patent and one utility patent were found as variations of exercise rollers. "The search was conducted in class 601, subclasses 112 and 122, and Design class 24, subclasses 211 and 212".

[0009] The patentability search firm report of single roller patents included D201,598, by Gaspar which is apparently a fluted metal cylinder with a handle on each end. Its description includes little more than the drawings. The second patent was D249,551 by Greenawalt, which is similar to the first one but seems to have smaller flutes that also seem to be beveled around the circumference of the device at equal intervals along the "working" surface of the device. In contrast to our invention, both these devices seem to be designed for someone to use on another individual because of the handles and neither is padded. In comparison, the first is a massage device while the other is a "therapeutic apparatus".

[0010] The third device reported by the firm is U.S. Patent 268,524 by Niles. The patent claim states that it is an "ornamental design for an acupressure instrument for applying rolling pressure to the human body". In contrast to the Rollover, it is obviously used by a practitioner on a patient and could be used on any part of the body.

[0011] The search firm reported that U.S. Patent 3,419,268 by Bellet would preclude us from obtaining a patent on the Rollover. This device included various layers of padding over a cylindrical core of approximate diameter of 1 ¼". However, this patented device was designed specifically to "improve the posture", "maintain the normal curvature of the spine at the-small-of-the-back and lower spine", "act as a cushion while sitting", and is primarily an exercise device and cushion. In contrast to the Rollover, the length of this device is placed perpendicular to the spine for exercise and cushion purposes and the Rollover is used parallel to the spine as a massage device—two completely different usages. The core of this device is the same diameter as the largest Rollover core, however, the Rollover padding only adds ¼ to 3/8" to its diameter while the finished diameter of this device is approximately 5" and therefore the two devices are not comparable in appearance, construction, and method of use.

[0012] Another patent reported in the Search results is U.S. Patent 3,645,256 by Morrison. The roller(s) are made with alternating discs of metal and "semihard rubber or other material having a suitable degree of resilience" which are then inserted over a "bolt" with one threaded end to allow firmness adjustments. The user lies down on the device and "moves his body transversally to the roller axis". Individual rollers of this device can be used with considerable effort to keep both the shoulders and hips lifted from the "floor or other smooth, flat, hard surface", which, according to the patent documents, could provide more exercise benefit than massage benefit. This "massage-exerciser device" can also consist of a "plurality of said rollers" to provide a more relaxing massage. In contrast, our invention is used parallel to the spine instead of perpendicular; the massaging is done by rotating over its axis; our invention requires little effort to use instead of exerting the effort to either stay balanced on one roller or continuously move up and down their device; ours is not adjustable; ours is padded for protection of the user; our invention is only a single roller; and our invention's single purpose is for massage. Therefore, this device is not comparable to our invention.

[0013] The first variation of exercise rollers was U.S. Patent D418,227 by O'Connor, which is an "ornamental design for a portable back massager". It appears to be two rollers with holes in the length into which some sort of dowel is inserted. Apparently the rollers rotate over the "dowels" and the dowels are perpendicularly connected at each end by a larger "dowel" which could be used as both handle and a method of maintaining the distance between the rollers to allow the user to roll over the device or have the device used on them by another person. In contrast to our invention, the rollers do not seem to be padded. Their device could be used parallel with the spine only if the person was lying still or moving the hips and/or shoulders in a side-to-side motion. It is probably generally used perpendicular to the spine. In comparison, it is used only for massage and it is also portable like our invention but probably much larger. It could also be used when the person was standing against a vertical surface. Therefore, overall this device is also not comparable to our invention.

[0014] One of the variations includes a "core with a foam cover (U.S. Patent 6,312,401 by Smith)"; however, this patent is for a "collapsible cervical traction device" that includes nine foam-covered rollers in a frame, onto which a user lays down. According to the Abstract for the device, it is designed to "align the neck of a person using the cervical traction device and also functions to elongate the spacing between the neck vertebrae and hold them in traction when the neck support assembly pivots

forwardly and downwardly". In addition, the Background for the device includes the statement that it was designed for "an individual to place their neck in traction for short periods of time". In contrast our invention allows the user to massage all the muscles that support their spine and was not intended to provide any form of traction. Therefore, this device is also not comparable to our invention.

[0015] In retrospect, the specifications we provided to the search firm were probably too broad in scope; however, we wanted to be certain to include enough breadth of scope to cover all permutations we conceived during the development phase of this first product. In addition, the Rollover is not an exercise device---it is a massage device. Therefore, none of these inventions are significantly similar in construction or method of use to our invention

[0016] Further Internet research for "massage devices" discovered one patent that described a "muscular therapy treatment apparatus for spine muscles (U.S. Patent 6,036,719 by Meilus)", that included references to other similar patents. The U.S. classes of that patent included 606/204, 601/134, and 606/240 and their "Field of Search" included 606/204, 237, 238, 241, 242, 201 and 601/134. In comparison, both inventions are designed for "self-treatment", "muscular therapy treatment", and to "relax and lengthen the muscles", plus ~~[it]~~ they "simulate(s) the type of deep concentrated pressure applied by muscular therapist hands to the seven layers of muscles attached to the lamina groove". In contrast, we believe our invention provides a similar but less intense benefit to the user; our invention can be used to massage the entire spine; the other device includes "sharp edges" which probably provide a more intense treatment than the Rollover with the padded surfaces (the smallest diameter Rollover is about ¾" when compressed") as compared to the "approximate one-half inch maximum width and depth" reported in Claim 1 of patent 6,036,719 (deemed necessary by the inventor to massage all seven layers of spine-support muscles and to provide "automatic vertebrae alignment"); our invention is a flat-sided cylinder as compared to "essentially convex" (claims 2, 5, 6, 9, 12, 13) or arched (arcuate) surfaces designed into their device; and our invention has foam-type padding while their apparatus has "sharp edges" (claim 1); and finally, their device is not as portable as our invention. This device is somewhat comparable in the benefits it provides to the user, but not in construction or appearance. Therefore, these inventions are dissimilar in construction and method of use to our invention

[0017] Three other patents that include back massaging rollers were similar to each of the others. U.S. Patent 6,419,650 includes 6 rollers, U.S. Patent 1,572,794 by Hamilton included 4 rollers, and U.S. Patent 6,071,253 by Rivera included one large roller. In contrast to our invention, all three required the user to place the rollers perpendicular to the spine and all had at least one roller with a groove to accommodate the spine. None were padded. Therefore, none of these inventions are significantly similar in construction or method of use to our invention

[0018] U.S. Patent 3,842,453 by Redfield is a "posture roller", "for exercise and therapy in posture maintenance and correction having a core of rigid material axially enlarged midway", and having a flexible material around the core and a cylindrical cover of flexible material. In contrast to our invention, this roller is much larger in length and diameter; it is used to correct posture; is used perpendicular to the spine; requires no active participation by the user; and applies more pressure in the center of the roller. In comparison, Refield's invention is also a roller with a hard core covered with a "suitable flexible material" but it is not similar in method of use or construction to our invention.

[0019] Four patents on single rollers also had grooves to accommodate the spine. U.S. Patent 6,129,687 by Powell et al. could also be filled with hot, cold, or hot and cold liquids and was somewhat adjustable. In contrast to our invention, their device would best be used perpendicular to the spine and its surface

could include an assortment of dimples, ridges, protrusions, or ribs instead of a smooth padding. U.S. Patent 5,170,778 by Jamis is also designed for use on a firm surface but in contrast to our invention it is designed to work perpendicular to the spine and is not padded. In comparison, it appears this invention is also designed to massage the lamina groove similar to our invention. U.S. Patent 3,750,650 by Shui is also a single roller. In comparison, it is also placed between the user and a firm surface and is used to massage the muscles supporting the back. In contrast, it is not padded; it includes a groove to accommodate the spine; it is used perpendicular to the spine and rolled from head to toe or vice versa; and can also be used on the legs and feet. According to the inventor, it is a "method of stimulating the first lines of bladder meridian as well as the entire set of antigravity muscles of the back, thighs, legs & feet" in contast to our simple back muscle massage device. U.S. Patent D264,625 by Shui seems to be similar to their previous patent and therefore not comparable to our invention. Therefore, none of these inventions are significantly similar in construction or method of use to our invention

[0020} U.S. Patent Application 20050085749 by Baederwalde is for a "device for therapeutic treatment of foot, heel, and/or like pain". This invention is a firm ellipsoid therapeutic device and includes a "pluarality of protuberances extending outwardly from the outer shell, and a central core that is completely or substantially filled with a substance capable of being cooled or heated, such substance also capable of retaining cold or heat for an extended period of time." In comparison, this invention could be used along the spine with the user taking advantage of the heat and/or cold therapy this device could provide to the user, plus it requires the user to actively participate in massaging sore body parts. In contrast, this outside surface of the device is made of a firm material instead of soft foam; it is ellipsoid with multiple protuberances instead of a smooth flat surface; it is designed primarily to be used on the foot; has multiple protuberances instead of a smooth, flat surface; and requires an external method of heating and./or cooling for maximum benefit rather than being instantly ready for use when compared to our invention. Therefore, this invention is not significantly similar in construction or method of use to our invention

[0021] In comparison, U.S. Patent Application 20020192714 by Pecora seems to be the most similar to our invention in actual material construction because it "comprises a hard cylindrical body wrapped in a cushioning sleeve"; the user rolls with the device between their back and a firm flat surface; and it provides therapeutic massage to the muscles of the back. In contrast, it is both "designed to be used perpendicular to the spine, principally upon 'the thoracic and cervical vertebrae'", while our invention massages the entire back and neck if so desired; pressure against their device seems to be the persons upper body weight instead of the infinitely adjustable pressure applied against our invention using body weight and/or muscle contractures and pressure applied by the additional weight of other body parts; and "the assembled device is preferably 23" long with a 4" outside diameter as compared to our possible 5" to 10" long by ¾" to 1 7/8" in diameter invention. Therefore, this invention is not significantly similar in construction or method of use to our invention

[0022] Because the "Patentability Search" and the subsequent Internet search found no similar usages of a foam-covered core using a single-roller design as a massage device used parallel to the spine, we believe we in fact have a basis for a patent on our invention.

BRIEF SUMMARY OF THE INVENTION

[0023] Our invention provides relief from mild backaches and could be used with professional medical assistance on more severe pain. It is inexpensive and portable because of the invention's small size and simple structure. The invention can be used almost anywhere there is sufficient floor space or access to

a vertical surface that can withstand the pressure applied against the device. Our invention provides massage and/or accupressure parallel to and adjacent to the spine, and sequentially at four locations on the spine and on each side of the spine at each location, plus it is padded to provide more comfort than many other massage devices.

[0024] The user of our invention can provide massage pressure along its entire 5 -10" length, plus they have control over the pressure applied against their lamina groove and back-support muscles by raising or lowering their hips, legs, shoulders, head, and/or arms to cause pressure against its entire length. The length applies concurrent pressure to several vertebrae which may provide intervertebral or intersegmental extension of the spine. The variation in core diameter from 9/16" to 1 ½" allows users to select the diameter that best suits their personal needs and/or body build.

[0025] Because this device is so simple, the method of using the invention is a critical factor in differentiating this device as a new invention. Each Rollover includes a copy of the (.COPYRGT. 2003 by Carolyn Leah Banks) method description, cautions, and instructions.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

[0026] Figure 1 is a perspective view of the assembled invention.

[0027] Figure 2 is an end view of the invention showing the beveled surface and the end plug or rod end.

[0028] Figure 3 is a lengthwise view of the invention. The core extends approximately {fraction 1/16"}" out from each end of the foam sleeve to allow the sleeve to be secured onto the core and the beveled foam surfaces at the ends are gently rounded.

[0029] Figure 4 shows the individual components of the invention.

[0030] Figure 5 shows the massage positions along the spine with the invention placed at one side of the first location.

DETAILED DESCRIPTION OF THE INVENTION

[0031] This invention consists of a simple tube **10** or rod **11**, approximately 5 to 10" in length and 9/16" to 1 ½" in diameter, used as a core and slipped inside a foam-type sleeve **12** with a ½" to 1 ½" inside diameter and a wall thickness of approximately {fraction (3/16)}" for a total diameter of approximately 3/4" to 1 7/8" (See Figures 1, 2, 3 & 4).

[0039] Two caps **13** of approximately the same outside diameter (OD) of the tube are used to finish each of the ends of the tube **10** (See Figures 2, 3, & 4) and extend the length of the finished invention **15** by approximately {fraction 1/8}".

[0040] The rods **11** are slightly ground at each end to minimize injury with an approximate {fraction 1/16}" radius (See Figures 1, 2 ,3 & 4) and the rods **11** are approximately {fraction 1/8)" longer than the foam sleeves **12**.

[0041] The foam sleeves **12** have a ground exterior finish, are slightly beveled on the edges, and are made of a durable material. The sleeves are secured to the core to prevent slippage of the sleeve.

[0042] Figure 5 provides a detailed view of each massage location **14** along the spine, including the precise location for the invention **15**. The method of using this invention **14** includes detailed instructions, notes, and cautions (.COPYRGT. 2003 by Carolyn Leah Banks) and is included with each Rollover. The method is referred to in Claim 1 and briefly described in Claim 3.